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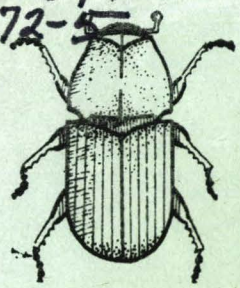

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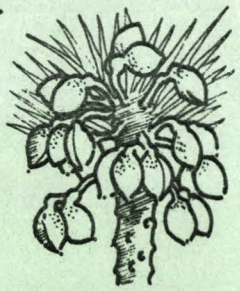

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EVALUATION OF PROPOSED SUPPLEMENTAL DWARF MISTLETOE CONTROL PROJECT, FLATHEAD INDIAN RESERVATION

by

Oscar Dooling,[1/] Steve Haglund,[2/] and Bob Miller[2/]

SUMMARY

Many nonmerchantable trees on the proposed control areas are moderately to heavily infested with dwarf mistletoe. Control by sanitation-thinning is desirable and is both biologically and economically sound.

INTRODUCTION

An evaluation of a supplemental dwarf mistletoe control project on the Flathead Indian Reservation was made January 24, 1972. This proposed project is in addition to the current 5-year control project that started in 1971.[3/] Oscar Dooling, Steve Haglund, and Bob Miller examined the areas.

TECHNICAL INFORMATION

Causal agents.--Douglas-fir dwarf mistletoe, *Arceuthobium douglasii* Engelm.; and western larch dwarf mistletoe, *A. laricis* (Piper) St. John.

1/ Supervisory Plant Pathologist, Forest Insect and Disease Branch.

2/ Foresters, Bureau of Indian Affairs, Flathead Indian Agency.

3/ Dooling, O. J. 1969. Evaluation of proposed dwarf mistletoe control projects, Flathead Indian Reservation. USDA Forest Service, Division of State and Private Forestry. Mimeographed Report.

Hosts.--Douglas-fir *Pseudotsuga menziesii* (Mirb.) Franco; and western larch, *Larix occidentalis* Nutt.

Type of damage.--Reduction of tree vigor, height and diameter growth, and some mortality.

Description of Areas

Ferry Basin Project 1-73-3.--The Ferry Basin unit was selectively logged during 1968-71. The unit contains about 5,500 acres; 65 percent of the acreage is Douglas-fir - western larch timber types. Approximately 1,000 acres can be made fully productive by sanitizing the residual stand which is all-aged, ranging from seedlings to 40-year-old trees. All infested merchantable trees were removed in the harvest cut.

Granjo Project 1-74-3.--Five hundred acres of pole-sized Douglas-fir and western larch, all lightly to moderately infested, are proposed for treatment on this unit. Some of the area has an infested overwood which will be removed in a harvest cut during fiscal years 1972 and 1973. Treatment will consist of sanitizing the residual stand after the overwood is removed.

Jette Project 1-74-4.--The Jette unit contains 500 acres of cutover second-growth Douglas-fir and western larch stands. A sanitation thinning is proposed for this area following the harvest of all infested merchantable trees. A survey of the area shows an average of 314 infested trees per acre ranging from 1 to 7 inches in diameter. The removal of these infested stems would leave 200 to 250 healthy stems per acre.

DISCUSSION

Dwarf mistletoe is the most serious disease on the Reservation. Growth losses of 50 percent have been recorded, and may run as high as 80 percent in heavily infested stands.

A 5-year program, initiated in fiscal year 1971, was established in an effort to return infested stands to full productivity. In order to intensify this effort, the Agency is making this supplemental request for additional funds - $50,000 each for fiscal years 1973 and 1974.

The Agency proposes to treat 1,000 acres on the Ferry Basin unit, 500 acres on the Granjo unit, and 500 acres on the Jette unit. Young second-growth stands will be treated by cutting all infested stems (300 to 500 stems per acre) after the overstory is removed in a harvest cut. Cost is estimated at $50 per acre.

Many of the understory trees of both species have visible infections; many more probably have latent infections. When trees with latent infections are released, the dwarf mistletoe is also released, usually more rapidly than the trees. Care should be used in selecting leave trees, and an inspection should be scheduled within 3 to 5 years after initial treatment. Any infections found during this inspection should be treated, or the original investment in control may be lost.

COST-BENEFIT ANALYSIS

A cost-benefit analysis is on file at the Flathead Indian Agency and shows a cost:benefit ratio of 1:2.4.

RECOMMENDATIONS

Decision for control.--Dwarf mistletoe control is recommended and is both biologically and economically sound.

Control method.--Logging of merchantable trees followed by sanitation-thinning of the residual stand by sawing is the method selected for these units.

Impact of control on other resources.--Because control will be by logging and mechanical thinning, there will be no adverse impact on other resources.